



# RESEARCH AND INNOVATION IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

Wim Lambrechts / James Hindson (editors)

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# IMPRINT

Research and Innovation in Education for Sustainable Development.  
Exploring collaborative networks, critical characteristics and evaluation practices.

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# INTRODUCTION:

## EDUCATION FOR SUSTAINABLE DEVELOPMENT IN A COMPLEX AND CHANGING WORLD

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Education for Sustainable Development (ESD) has become an important issue in society. The United Nations Decade for ESD (DESD, 2005-2014) has encouraged innovative approaches in education in order to contribute to the societal transition towards sustainability through both the formal education system and non-formal and informal learning settings (Buckler and Creech, 2014). Furthermore, as learning does not take place in separate silos, the interconnection of different stakeholders is also seen as a necessity in ESD. During the last decade an abundance of ESD initiatives have grown at all levels in society. Governments have implemented the topic in policy briefings and educators and researchers have developed models for curriculum innovation and the integration of sustainability competences. Civil society partners have developed initiatives to embed ESD in non-formal settings, schools and teachers worldwide have started ESD projects at the local level focusing on a variety of topics.

Despite the abundance of initiatives ESD deals with a conceptual problem. A multitude of definitions and interpretations circulates about ESD and this makes it very hard to understand the essence of the concept, let alone explain it to educators who need to integrate it in their teaching. While it would stretch far beyond the scope of this introduction and this publication to dive into the many definitions and interpretations of ESD, it is worthwhile to take a pragmatic approach and adopt a working definition. The following might suit this purpose: “Education for Sustainable Development is learning to think about and work towards a liveable world, now and in the future, for ourselves and for others, here and elsewhere on the planet” (Van Poeck and Loones, 2011, p. 5). The definition clarifies that ESD is not just adding sustainability as an extra topic to the curriculum, but rather enabling learners to contribute to sustainable societies.

ESD is about preparing the learner for an active role in society oriented towards sustainability. In this sense ESD is connected to the tradition of citizenship education, preparing students to become active citizens in society (Dewey, 1944). On the other hand ESD is opposed to current trends in education, influenced by global capitalism, and focusing on a managerial approach and economic efficiency demands (Kitcher, 2009). In a context of active citizenship in society a key point of ESD is to develop a deep understanding of which sustainability issues are at stake, now and in the future. However, the world is constantly and rapidly changing, what we think is sustainable today might not be sustainable tomorrow (Wals, 2015). Sustainability issues are characterised by complexity and uncertainty, and as a result ESD needs to evolve itself in order to be able to provide skills and competences that enable to cope with this complexity and uncertainty (Lambrechts et al., 2013). In order to deal with future sustainability issues, societies need to become flexible, adaptive and resilient.

The innovative strength of ESD could be the variety of approaches and stakeholders involved, creating new opportunities to foster the sustainability transition. In order to follow-up the DESD, the Global Action Programme (GAP) on ESD has been launched with the overall goal to accelerate progress towards sustainable development. The GAP has five priority action areas (UNESCO, 2013):

1. Advancing policy;
2. Integrating sustainability practices into education and training environments (whole-institution approaches);
3. Increasing the capacity of educators and trainers;
4. Empowering and mobilizing youth;
5. Encouraging local communities and municipal authorities to develop community-based ESD programmes.

The diversity of ESD approaches resulting from the Decade as well as the new priority areas defined by the GAP, are both reflected in this publication. Following the complexity and uncertainty of sustainability issues and the need to interpret ESD in a flexible way, the publication focuses on innovation and research in ESD. Innovative approaches are necessary when it comes to realise change processes in education, whilst the nexus research-education provides guidance for this process, with attention towards quality and results.

This book is the outcome of the work of Environment and School Initiatives (ENSI), an international network of educational partners, and the European project CoDeS,

Collaboration of Schools and Communities for Sustainable Development (2011-2014). The objective of this publication is to provide collaborative experiences in ESD research and innovation. It provides a look back at initiatives during the DESD and an outlook on future possibilities in the field of research and education for sustainable development during the GAP.

The contributors of the chapters all come from different organisations including universities, secondary schools, non-profit organisations and governmental bodies, and in itself this variety demonstrates the possibilities of connecting different stakeholders through ESD initiatives. The authors also come from a variety of European countries (Austria, Belgium, Germany, Greece, Hungary, Italy, Poland, Spain, Switzerland, United Kingdom), as well as some South-East Asian countries (Korea and Malaysia).

The book is divided into four parts. Part I. is devoted to networks and collaboration approaches for ESD, and opens with a chapter on the ENSI-network, which has been active in the field environmental education (EE) and ESD for thirty years. The second chapter focuses on an example of a strong and mature national network for ESD, the Austrian network “Ecologising Schools” (ECOLOG), while the third chapter provides insights into the process of initiating a new national network: WEEC-Italy. Chapter 4 describes the added value of the global network of the Regional Centres of Expertise on ESD through a focus on the Asia-Pacific region. Chapters 5 and 6 examine collaborative approaches between different partners, with case studies of an intergenerational dialogue in Austria and a local initiative focused on waste management in Italy.

Part II. explores critical characteristics in ESD. Chapter 7 reflects on what happens when ESD does not produce the results we expect or want. Chapter 8 focuses on the role of education in times of uncertainty and the necessity of integrating knowledge uncertainty into the learning process. Chapter 9 provides an interesting study of ESD in remote communities and makes a call to introduce place-based and place-conscious pedagogies in teacher education. Chapter 10 looks at the different possibilities of competences for sustainable development in higher education. Chapter 11 further elaborates on this topic and provides insights in how to enhance young people’s competences to contribute to the sustainability transition. Chapter 12 provides a case study in which local ecological knowledge is valued and integrated in urban schools in Malaysia.

Part III. is oriented towards the connections between education and research for sustainable development. Chapter 13 opens the debate by reflecting on ‘committed’ research into ESD and the challenges it poses to different stakeholders. Chapter 14 provides a case study in which collaborative approaches among researchers were encouraged in the ENSI network. Chapter 15 explores the role of transdisciplinarity in research and ESD as a possibility to deal with multifaceted and complex sustainability issues. Chapter 16 describes an example of a change process for sustainability in higher education and the role of the critical friend in this process. Part III concludes with chapter 17 exploring sustainability concepts in master and PhD theses in a Korean graduate school.

Part IV. provides insights into different evaluation and assessment approaches to ESD activities. Chapter 18 looks at ESD programmes and the evaluation in line with values inherent to ESD. Chapter 19 connects the evaluation of sustainability aspects to science education programs. Chapter 20 provides a comparative evaluation of the approaches in ESD integration in Polish and English schools. Chapter 21 looks at the analysis of evaluative discourse regarding ESD projects. The final chapter 22 provides a case in which a formative model to promote professional skills in ESD is assessed.

This publication is one of the outcomes of CoDeS, a Comenius multilateral Network with the support of the Lifelong Learning Program of the European Union. The final words of this introduction are devoted to acknowledge the collaboration and support of so many people in editing this book. First, we would like to thank all the forty authors who contributed to the chapters of this publication. Thank you all for your efforts to revise your contributions and willingness to take our (sometimes critical) comments into account. We hope the process of publishing your chapter has been as rewarding as it was for us editing it. A special word of thanks goes out to our colleagues from ENSI who initiated and supported this publication: Christine Affolter, Michela Mayer, Reiner Mathar and Günther Pfaffenwimmer and Without the support from ENSI, this publication would not be possible. Thank you!

Wim Lambrechts and James Hindson  
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